

MARK1 (H-23): sc-130815

BACKGROUND

The microtubule matrix within a cell plays a central role in intracellular transport, cell shape during differentiation and chromosome partitioning during mitosis. During these processes, microtubules transition rapidly between stable and dynamic states. MAP/microtubule affinity-regulating kinase 1 (MARK1) is a 795 amino acid protein belonging to the CaMK Ser/Thr protein kinase family. MARK1 is thought to play a role in the stability of the microtubule matrix of the cytoskeleton. MARK1 is activated by phosphorylation of Thr 215 by LKB1 in complex with STRAD and MO25. Localized to the cytoskeleton, MARK1 contains one kinase-associated (KA1) domain, one protein kinase domain and one UBA domain. Expressed as three isoforms produced by alternative splicing, MARK1 is found with highest levels in brain, skeletal muscle and heart.

REFERENCES

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3. Schneider, A., et al. 1999. Phosphorylation that detaches Tau protein from microtubules (Ser 262, Ser 214) also protects it against aggregation into Alzheimer paired helical filaments. *Biochemistry* 38: 3549-3558.
4. Timm, T., et al. 2003. MARKK, a Ste20-like kinase, activates the polarity-inducing kinase MARK/PAR-1. *EMBO J.* 22: 5090-5101.
5. Lizcano, J.M., et al. 2004. LKB1 is a master kinase that activates 13 kinases of the AMPK subfamily, including MARK/PAR-1. *EMBO J.* 23: 833-843.
6. Trinczek, B., et al. 2004. MARK4 is a novel microtubule-associated proteins/microtubule affinity-regulating kinase that binds to the cellular microtubule network and to centrosomes. *J. Biol. Chem.* 279: 5915-5923.
7. Marx, A., et al. 2006. Structural variations in the catalytic and ubiquitin-ociated domains of microtubule-associated protein/microtubule affinity regulating kinase MARK1 and MARK2. *J. Biol. Chem.* 281: 27586-27599.
8. Wissing, J., et al. 2007. Proteomics analysis of protein kinases by target class-selective prefractionation and tandem mass spectrometry. *Mol. Cell Proteomics* 6: 537-547.
9. Maussion, G., et al. 2008. Convergent evidence identifying MAP/microtubule affinity-regulating kinase 1 (MARK1) as a susceptibility gene for autism. *Hum. Mol. Genet.* 17: 2541-2551.

CHROMOSOMAL LOCATION

Genetic locus: MARK1 (human) mapping to 1q41; Mark1 (mouse) mapping to 1 H5.

SOURCE

MARK1 (H-23) is a purified rabbit polyclonal antibody raised against a peptide mapping near the N-terminus of MARK1 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

MARK1 (H-23) is recommended for detection of MARK1 of mouse and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

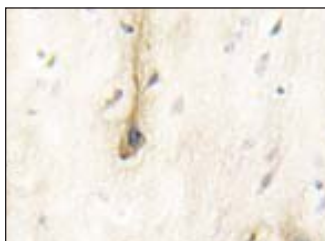
Suitable for use as control antibody for MARK1 siRNA (h): sc-75749, MARK1 siRNA (m): sc-75750, MARK1 shRNA Plasmid (h): sc-75749-SH, MARK1 shRNA Plasmid (m): sc-75750-SH, MARK1 shRNA (h) Lentiviral Particles: sc-75749-V and MARK1 shRNA (m) Lentiviral Particles: sc-75750-V.

Molecular Weight of MARK1: 89 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 3) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



MARK1 (H-23): sc-130815. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human brain tissue showing cytoplasmic localization.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.